

Virginia WILDLIFE

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Drag Hunt

A pack of fox hounds in hot pursuit of an imaginary reynard becomes the subject of a ribbon-winning photograph by Virginia's State Chamber of Commerce photographer, Phil Flournoy.

Virginia WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia
*A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and
Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia*

COMMONWEALTH OF VIRGINIA

VOLUME XVI APRIL, 1955 No. 4

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Cover

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PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia

Editor: J. J. SHOMON

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Additional entry Baltimore, Md. July 1, 1954



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WILDLIFE

Commission of Game and Inland Fisheries, Richmond 13, Virginia

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Your Inheritance

WHAT we shall have in Virginia—in America—a hundred years from today, even 50 or 25 or 15 years, will largely depend on how well we achieve the idea of personal restraint. None of us likes the thought of restraint. The pioneers were "agin it"; so were the early trappers; so were the lumbermen; so were the buffalo hunters. We ourselves rebel against restraint as children and we rebel in like manner as adults. It is a natural reaction, especially in an atmosphere of freedom and a land of plenty. But man finds that a measure of restraint soon is necessary for his own good lest he soon find that license and independence become irresponsibility.

When we inherited the earth what did we receive? Well, to make a long story short, we inherited a planet born of another sun with a surface of rock and water. We inherited a world of basalt and granite and iron and gases.

At first there was no life on earth. For billions of years nothing lived. Only the substance of life remained and rock. Over the eons of time the earth's shell changed and rock fragments started to break up. From the polar ice caps the glaciers pushed southward, ground the rock, and pulverized great surfaces of the earth. From the cold exteriors green rivers formed and their endless flow and scouring action helped to tear down the rocky land. In other places volcanoes spit their turbulence on the earth and mountains rose and valleys formed. In still other places the earth buckled and great fragments rose into the sky, forming jagged block mountains and precipitous peaks and enormous crags. The rocks in turn were attacked by the elements, the cold and ice, snow and rain, repeated wettings and desiccation, and an endless chain of erosion began.

And then life began on the planet earth. At first it came in the form of simple plants in the sea, then plants on the land among the sand and silt formed by the glaciers. Tiny lichens emerged. They attached themselves to the barren rock and with the acid of their bodies they dissolved the minerals from the rock. They grew and multiplied and died, and the organic substance of their forms produced the first soil—our first inheritance.

Over the millions of years that followed other life came, early plants and early animals, and in their life and in their passing the earth's soil surface grew. Step by step the character of the soil changed and with it the character

of plants and animals themselves. The mountain lake became a marsh and the crowding water lilies soon gave way to shrubs and finally a forest. As the planet life changed so did the animal life. Out of the protozoa came other animals in countless forms, in countless variety. This too was our legacy.

And then came more animals, great and small, and they populated the earth. Out of the lower forms came the trilobites, ancient cousins of our modern crayfishes and crabs, animals of the seashores who ruled the earth for a hundred million years. They were followed by others, by fishes and reptiles and birds and mammals. And then man made his appearance on earth.

With fire and rude tools he attacked the earth subduing it to his interests. He invented gunpowder and dynamite and made plowshares and axes. He harnessed the products of the earth to fight the earth and he succeeded.

Today much of man's inheritance is gone. He has conquered much of the earth and now looks to other planets to conquer. He has built a mighty civilization, but at terrible costs. Now comes the day when he must either find new universes to expand to or control his desires on earth.

Today the pangs of hunger continue to menace one-third of the peoples of the world and, we, in enlightened America, are still losing each year a staggering half million acres of land. We are losing our forests—cutting three saw timber trees for every two that grow. We are still polluting our waters and finding our water tables lower and lower. We have decimated 21 species of American wildlife in less than 200 years and now are endangering 57 others.

It is time for every American to understand that the lack of restraint has endangered much of our inheritance. The depletion of our natural resources has come only as a result of the loss of social self control. When we lose precious top soil to wind or water, somewhere man has failed to control his wants. It is the same with trees, with grass, with wild animal life. Behind every total eclipse of a species of modern wildlife lies a measure of greed and carelessness and unrestraint.

But it need not be this way. The future can be met. The problem depends upon you—each and every one of us. The decision rests with us, not upon some nebulous planet in a hidden cosmos, not even upon science, for science has yet to find a way to produce life. The decision still rests with man himself under the divine guidance of an everlasting Providence.

Governor Stanley in his recent statement on Wildlife Week made this profound observation: "The careful and wise use of our earth's natural wealth—soil, waters, plant life, animals, and minerals—is the concern of every man, woman, and child in the Commonwealth. No longer can we look upon conservation as an idea promoted only by certain individuals or groups. Natural resources in their abundance are enjoyed by all; so *all* must share in the responsibility for their intelligent use."

No, there are no reserved seats in the conservation drama. Since all of us share in nature's abundance, all of us too must accept a measure of responsibility for its wise use.—J. J. S.



One of the most overlooked practices in game management is the planting and the encouraging of certain wildlife food-bearing trees.

For More Wildlife— FAVOR THE FOOD-BEARING TREES

By I. T. QUINN
Executive Director

FOOD IS an essential requirement of all wildlife. Without it no form of animal life can live. Aldo Leopold, the founder of game management in America, viewed the modern wildlife crisis as largely a problem of food.

The question of whether food or cover is of greater importance to wildlife cannot be answered categorically. Both are important. Without food wildlife cannot live and without protective cover wildlife cannot remain on an area. Both are vital and both are necessary if we are to have and to hold wildlife. Furthermore, the more thoroughly that food and cover are interspersed and the more uniformly that they are distributed over an area, the more they will tend to increase its value for wildlife.

One of our most overlooked practices in game management is the planting and the encouragement of certain food trees valuable to wildlife. Game management is largely a manipulation of plants that are beneficial to animals. If we want more wildlife, it is only logical that we favor those plants that supply wildlife with certain basic requirements.

In farming, we well know that some forms of domestic livestock feed chiefly on grass, others prefer

browse or grain, and still others favor something else. So it is with wildlife. Among the browsers we have the deer and their allies. A special phase of browsing known as budding is particularly a characteristic of the grouse family. Herbage or greens is important to such species as elk or other ruminants and to the rabbit and rodent alliances in proportion to deviation from their customary browsing habits. Greens are taken by such wildlife forms as turkey, quail, grouse, and to some extent by a great many small birds and mammals. Mast, on the other hand, is a staple food of the squirrel family, but is also important to bears, deer, grouse, wild turkey, quail, doves, raccoons, opossums and mice. On the other hand, fruits are most important to birds of certain families like grouse, quail, crows and a host of songbirds.

If wildlife is to live and multiply it must have its proper share of natural food. Food is always paramount. Animals must have it or perish.

Food, to be useful to wildlife, must be abundant or at least available in all seasons, for wildlife must eat 365 days a year. If food is not available for as much as several weeks during critical periods, it will make otherwise suitable land poor for wildlife. If man himself

through his ability to adjust to his environment cannot do without food for even a few days, how can we expect our lower forms of animal life to do so?

To keep wildlife in a sound and healthy condition man can do much to assist nature and help replenish wildlife's larder when it is needed. This can be accomplished in two ways: first, emergency feeding can be done in the winter, usually when snow lies deep and the cold is intense. Secondly, man can plant and favor various types of shrubs, trees, vines, grains, and grasses which eventually produce nuts, berries, and seeds desirable for wildlife.

Artificial winter feeding is not particularly recommended by the Game Commission. It is costly and, in places, wasteful. It represents such a herculean task that it becomes impractical except in certain specific cases. This then leaves us with the other alternative of helping nature augment the natural food supply. Here man can do much.

To meet the ever-increasing demands of Virginia's half million sportsmen who annually take to the fields and woods, our wildlife must be given a chance to propagate to the limits of its natural ability. This must be done or else we'll each have to settle for less and less.

These pages, month in and month out, have been replete with recommendations for specific practices for quail and deer, and to a lesser degree, for the other species. Written by biologists, they are useful and wise suggestions as to what to do for certain situations.

Without meaning to detract one iota from what has

been said, or what is being done, for certain species, I have long felt we have neglected putting our trees to work for wildlife.

Recently I was placed on the Governor's Committee on "More Trees for Tomorrow" in the hope that the interests of wildlife would not be overlooked. While the *more trees* movement is a good movement and can have very beneficial results, it must be a balanced approach and a multiple purpose program.

The unfortunate thing about our past work in game management is that we have seldom emphasized the practical aspects of growing trees for wildlife and other uses. This article therefore is a special plea for the encouragement of food-bearing trees for wildlife.

If each sportsman's organization would put on a campaign for the planting of food-producing species of trees the total effect, statewide, would be great indeed. Mass planting of nondescript varieties of trees without regard to special needs and special conditions is useless, a waste of time, money, and energy, and will dampen the spirits for a more worthy tree planting project. Trees which have high wildlife food value are the oaks (particularly pin, white, red, and post), maple (browse for deer), the hickories, walnut, hazelnut, black cherry, persimmon, holly, beech, dogwood, willow and aspen (for beaver), sumac, wild apple, hawthorn, tupelo, chinquapin and blight-resisting chestnut.

The chestnut and chinquapin group could become an important source of food in Virginia and the eastern states. Something like this is badly needed to replace



Commission Executive Director I. T. Quinn, Commissioner T. G. Herring and District Forest Ranger J. R. Hicks inspect a young blight-resisting chestnut tree planted on a wildlife clearing in the George Washington National Forest.



The planting of nut-bearing trees for wildlife is an excellent sportsmen's club project. Done on a widespread basis it can have a great effect on the future food supply for game and other forms of wildlife.



Mast is an important food item to a host of wildlife forms. Walnuts, acorns, serviceberries, mulberries are important articles of food for many mammals and birds.

the American chestnut killed by the blight years ago. When we lost the chestnut, man and wildlife lost the best timber and food tree that nature has ever produced.

Several varieties of Chinese chestnut are now doing very well and may be planted with excellent results.

Chestnuts planted in cut-over land and pasture provide food for wildlife and shade and food for livestock. Young trees should be protected by fencing, however, until they become established. Best results are obtained where the trees have plenty of sunlight.

Chinese chestnut seedlings are now offered for sale by a great many commercial nurseries. A partial list—as well as a bulletin on how to grow chestnuts—may be obtained from the Agricultural Research Service, Dept. of Agriculture, Washington 25, D. C. *The U.S.D.A. does not now distribute chestnut seedlings to the general public.*

The chinquapin is in a bad way in Virginia and needs to be more widely favored. It was at one time a very valuable tree for wildlife, but continued abuse and mismanagement of the land has caused it to disappear from great sections of its former range.

Black walnuts make another ideal planting project for sportsmen. Propagation can be by means of nut planting or by transplanting seedlings or young trees. Walnut

trees are not only useful as future timber trees but their use can be doubled by grafting certain branches to English walnuts. This not only provides additional food for the table but will increase the food supply for squirrels and other nut-eating animals.

Sportsmen who do not own property but who are constantly trying to find a place to hunt would do well to look into the possibility of providing planting stock for their farmer friends. That such measures are good game management and public relations is well known in areas where game abounds and cordial relations exist between sportsmen and landowners.

Mast is an important category of food to a host of wildlife forms. The landowner who favors certain oaks and nut trees is soon rewarded by a greater abundance of wildlife around the place. The quail are largely seed eaters, but they also feed on many acorns. In one recent study, biologists found that acorns constitute 6 percent of quail food by volume and occurred in 12 of every 100 quail crops. Though quail cannot handle the large acorns too well, the smaller acorns of the post oak and white oak are readily eaten whole. Pin oaks provide better than $\frac{3}{4}$ of the total food eaten by certain ducks. The wood duck in particular is a species that will return

(Continued on page 10)



Dead fish and disappointed fishermen are the direct results of polluted water. This scene is on the New River near Narrows.

***How well are we cleaning up our polluted rivers and streams?
Here is an up-to-date report by a member of State
Water Control Board summarizing . . .***

Pollution Abatement Progress

By ROSS H. WALKER

WHILE provisions of the Virginia State Water Control Law and policies of the State Water Control Board are more or less understood, it may be interesting to review the progress which has been made in pollution abatement, and to obtain a better idea of those areas where much remains to be accomplished. Within the scope of this article, we cannot hope to cover the subject in very great detail and must confine the discussion to some of its important aspects.

Potomac River Basin

Pollution has largely been eliminated in the upper part of this area by the installation of treatment facilities by the City of Winchester and numerous relatively small industries. In the area around Washington where conditions have been very bad, the County of Arlington as well as Fairfax, Vienna, Manassas and Fairfax Sanitary District No. 1 have provided treatment. Alexandria has contracted for treatment facilities, and Fairfax County

has voted a bond issue to provide treatment facilities for Sanitary Districts No. 3, 4, and 5.

Rappahannock River Basin

The City of Fredericksburg, though behind in its schedule under an order of the Board, has provided final plans, purchased a site for a treatment plant, and is taking steps to provide for a bond election to finance the project. American Viscose has a very substantial industrial waste problem which, together with the City of Fredericksburg sewage, has caused septic conditions in the river during practically every year. While Viscose has reduced its wastes by modernizing plant operations, it has a very complicated problem with no final solution in sight. The lowflow of the river and effects of tides add greatly to the complications of this problem. In the Tidewater area of this basin, a number of minor problems connected with tomato canneries, etc., have not been fully provided for.

Shenandoah River Basin

The City of Waynesboro and the towns of Harrisonburg, Front Royal and Luray have constructed or have under construction sewage treatment plants. The town of Berryville has inadequate treatment. The towns of Strasburg, Woodstock, Edinburg, Mount Jackson, New Market, Dayton, Bridgewater, and Elkton have not provided treatment facilities, but all of them are in various stages of planning to provide facilities. The towns of Broadway and Timberville, though quite small, have in combination with industries in that area, a rather serious problem where progress of some polluters has been slow. Staunton has had treatment facilities since before the enactment of the Water Control Law. A major industry, American Viscose, at Front Royal, has practically eliminated its pollution at that point. Another major industry at Waynesboro, Du Pont, has reduced its wastes by about 70 percent, and if plans of Crompton-Shenandoah at Waynesboro materialize, it should be able to reduce its wastes by about 70 percent. Virginia Oak Tannery at Luray now seems to have its problem under control.

York River Basin

The major problem here is at West Point where the town has constructed and has in operation a sewage treatment plant. Chesapeake Corporation has made progress toward the reduction of its wastes, but probably further reductions will be necessary. The town of Orange has modernized and enlarged a treatment plant which was in operation when the law became effective. The town of Louisa, though a comparatively small area, has a serious problem yet to be solved. The community around Yorktown has recently had plans approved to provide for sewage treatment.

Chesapeake Bay Basin

The most serious problem of pollution in this area arises from the menhaden processing plants at Reedville and White Stone. Considerable progress has been made in this connection at the White Stone plant and treatment facilities are in process of being provided in both

areas to be effective at the beginning of the forthcoming season. There are numerous other minor industrial wastes in this very wide area, some of which are in process of solution. Additionally, there are sewage wastes yet untreated at Cape Charles and Onancock where facilities for their treatment are under study, but without definite action being taken.

James River Basin

Some of our most serious pollution problems are involved in this area. At Covington, the city has completed and is operating a treatment plant. West Virginia Pulp & Paper Company has under construction waste disposal facilities which are expected to reduce its pollution by about 80 percent, even though these facilities may not accomplish too much in improvement of color of these wastes. Industrial Rayon Corporation at Covington has made very substantial reductions in its industrial waste. The City of Clifton Forge has voted a bond issue to provide treatment facilities, but plans have not yet been completed by their engineers. The voters of Alleghany County have approved a bond issue to finance construction of treatment facilities to serve minor areas in this vicinity. Further downstream, National Container Corporation at Big Island, has a rather serious waste problem which has only been partially solved by the construction of lagoons. The town of Lexington has a sewage treatment plant under construction, and the City of Buena Vista has approved a bond issue to provide sewage treatment. At Glasgow, the James Lees plant which was completed after the enactment of the Water Control Law, provided extensive facilities for treatment before the plan was put in operation. In the Lynchburg area, the City of Lynchburg is in process of completing plans and specifications and will probably hold an election in a short while on a bond issue to provide for construction of treatment facilities. Mead Corporation at Lynchburg has made some progress in eliminating its wastes, and at a meeting of the Board last August was requested to present to the Board a program for abatement within a period of six months. Below Lynchburg, The American Cyanamid plant at Piney River has a very serious acid waste problem which resulted in a severe fish-kill last summer. The Commission of Game & Inland Fisheries estimated the value of the fish killed on this occasion to be in excess of \$50,000. The Board has asked the Attorney General to instigate court action if necessary to recover these damages. While the company advises that steps have been taken to prevent a recurrence, the over-all problem incident to these wastes has not been solved. The City of Charlottesville which contributes pollution to the Rivanna, flowing into the James, has voted for a bond issue to finance the first phase of its plan to revamp its existing treatment plants and provide for further treatment. The City of Richmond has under construction facilities for the treatment of its sewage and is in process of contracting with Sanitary District A covering a portion of Henrico County for the treatment of their sewage. The city expects to provide for treatment of approximately 50 percent of its sewage by 1958 and treat-

ment for the remainder some years later. Below Richmond, the Du Pont plant has reduced its pollution by about 50 percent and plans further reductions. There is a heavy concentration of pollution at Hopewell, both from city sewage and industrial wastes. The city is in process of preparing final plans and specifications for treatment facilities and industries are proceeding with plans for the reduction of their wastes. Along the Appomattox which joins the James at Hopewell, the City of Colonial Heights has a treatment plant in operation. The City of Petersburg has let a contract for the construction of treatment facilities. In the Hampton Roads area, treatment has generally been provided for by the Hampton Roads Sanitation District Commission created prior to the State Water Control Law.

Roanoke River Basin

Important progress has been made in this area. The City of Roanoke and the town of Vinton have had their treatment facilities in operation for about three years. Roanoke has finally reached an agreement whereby it will treat the wastes from Salem as well as certain other industrial wastes from that area in the Roanoke plant. The American Viscose Plant at Roanoke has in preparation final plans for extensive treatment of their wastes which will be the final link in the cleanup of this area. Further down in the Basin, Altavista and Brookneal have only made preliminary surveys. Clarksville has completed treatment facilities. The town of Bedford on the Otter River has constructed a new treatment plant. The City of Martinsville and some of the industries in that area are far behind in their program of abatement. The City of Danville has final plans and specifications for sewage treatment in preparation. Dan River Mills has plans for process changes to substantially reduce its wastes. South Boston has plans and specifications and is under orders by the Board to provide treatment facilities.

Chowan River Basin

The town of Franklin has had a treatment plant in operation for some time. Lawrenceville just had a bond election on March 29th. Emporia has had engineers prepare a preliminary report but apparently, has gone no further. Virginia Dyeing Corporation at Emporia has not yet complied with orders of the Board to provide treatment. Johns Manville plant at Jarratt provides some treatment of wastes with the possibility that further treatment will be necessary. Camp Manufacturing at Franklin has reduced its pollution load to perhaps only 25 or 30 percent of what it was in 1946, though this significant reduction is not sufficient to protect the river during periods of low flow.

New River Basin

The town of Hillsville has constructed treatment facilities. Christiansburg has had treatment facilities for a number of years, as has Blacksburg and V.P.I. The towns of Narrows, Pearisburg and Wytheville have constructed treatment plants within the last three years. Celanese Corporation at Narrows has made considerable progress

in reduction of their waste. Pulaski, Radford, and several small industries in that area have not provided treatment.

Tennessee River Basin

On the Clinch River and the three forks of the Holston River making the Tennessee River Basin progress has not been too satisfactory. Marion, Abingdon, and Bristol have provided sewage treatment facilities. Towns of Richlands and Norton have turned down bond issue referendums. Relatively minor industrial wastes in this area have only to a small extent been taken care of. A serious industrial waste problem exists as a result of the discharge from the Olin, Mathieson plant at Saltville, where a solution to the problem has not yet been found.

Big Sandy River Basin

Aside from the small municipalities in this area pollution arises mainly from coal mining operations. Some of these operations have provided facilities to prevent pollution while others have done little toward abatement. Fortunately, to only a very minor extent are we concerned here with acid mine drainage which is such a serious problem in several other states. It will be seen that much of the progress attained has not yet been reflected in the condition of our streams and that much yet remains to be done before we can determine when some of our badly polluted areas will be cleaned up. On the other hand, a lot of real progress has been made by industries finding solutions to their problems and by the municipalities coming to a better recognition of their responsibilities.

The Board in its efforts to abate pollution has been aided immensely by cooperation from the Commission of Game and Inland Fisheries, the State Department of Health, the Izaak Walton League and other organizations as well as many individuals who recognize the necessity for protecting and improving our streams and other state waters.

FOR MORE WILDLIFE (Continued from page 7)

to farm woodlands if they have a good mast crop. A turkey gobbler will eat 35 giant red oak acorns in one meal and a pound of red oak acorns contains 1300 calories, more than enough to keep a gobbler going for a long time.

The suburbanite who lacks a farm but owns a small acre or two can likewise do something to favor wildlife on his place. He can do his planting in a limited way. When this is done in contiguous fashion by adjoining landowners, the total effect will be considerable in the end. I know one small property owner who has more than 24 different varieties of fruit and nut-bearing trees on his one-acre property, and the additional wildlife that has become attracted to his place as a result of this alone is hard to believe. But "big oaks" from little acorns grow and we must not underestimate the value of small food plantings. Given enough of them, they become big food plantings—and this is what wildlife is begging for.

MY WIFE MEETS A BEAR

By E. ELLIOTT

JUST after we were married, my wife and I lived in a cabin at the foot of the tower in which I served as an observer. There was no water within a mile and consequently my wife had to journey to the nearby cabin of my father to do our laundry. These trips were weekly occurrences until one day, they came to a very abrupt end.

On this day my wife set out carrying the laundry and a ten-pound bag of sugar. Her path took her through an old orchard in which she noticed some horses acting in a peculiar manner. She soon found out why. Our small dog, which had followed her, bounded over the fence into the orchard but in a few seconds returned with a huge bear at his heels.

The dog headed for my wife, hoping for protection. My wife, who had never seen a bear except in pictures, began running towards my father's house, still a mile distant. In her excitement and fright, she remembered the story that bears like sweets. Rather than be eaten by the bear, she threw the bag of sugar at it but the bear ignored the tempting morsel and the chase went merrily on.

In a few moments the bear gave up the chase but my wife kept right on running until she arrived at my

father's. Although she was terrified and gasping for breath, she managed to blurt out the story to my parents. When the story was unfolded, bit by bit, Dad phoned me and I trained my binoculars on the orchard. The bear had returned and I saw it there, peacefully munching apples. By its side was a small bear cub. Dad immediately

proceeded to the spot with his rifle, but by the time he got there, the bear had wandered into the woods. My wife was in bed for three days, lost her ten pounds of sugar and has had a great dislike for the bear family ever since.

(Editor's note on moral of the story. Don't send your wife on laundry errands quite so far, and have her use more economy with the household sugar.)



Reprints Available

Individual reprints of articles are now available on the following: Ed. Leaflet #1, the Cardinal; Ed. Leaflet #2, the Dogwood; Ed. Leaflet #3, the Beaver; Ed. Leaflet #4, the Cottontail Rabbit; Ed. Leaflet #5, the Bobwhite Quail; Ed. Leaflet #6, Suggestions for Sportsmen's Clubs; Ed. Leaflet #7, Your Game Commission; Ed. Leaflet #8, Suggestions for the Teaching of Conservation. Individual copies of the educational leaflets can be obtained by writing to the Virginia Commission of Game and Inland Fisheries, Richmond 13, Virginia. All leaflets are designed to fit three-ring, 7 x 9 looseleaf binders.

Also available from the Commission is the reprint "Nesting Boxes, Feeding Stations, Bird Houses and Wildlife Shelters."

* Taken from *Sylvia*, Vol. 8, No. 6.

Commission Prints Fish Charts

The color plates which appeared in the recently published Game Commission publication *Freshwater Fishing and Fishlife in Virginia* are being arranged in chart form suitable for hanging in club rooms, schools, dens, etc. They measure 18 x 30 inches and have metal border strips on the bottom and top including a hanging eyelet.

These beautiful four-color fish charts showing the

principal freshwater sport fishes of the state come packed three to a mailing tube and will sell for \$1.00. They are available from the Virginia Game Commission, Box 1642, Richmond 13, Virginia.

Here is an excellent fish conservation education project for sportsmen's clubs: help supply local schools with copies of these charts.

Virginia's Deer, Bear and Turkey Kill for 1954-55

Following the trend of the past several years the state-wide kill of deer continued its upward climb during the past hunting season. While this increase has been gradual, as one would expect, the total number of deer killed is double that of only five years ago. Looking ahead, there is no reason why Virginia's sportsmen within the next few years shouldn't harvest enough deer to again double the present figure, given good deer management and sportsmen's cooperation.

High as the deer harvest was it was still below pre-season estimates, especially west of the Blue Ridge. Here disagreeable weather was widespread during four of the six-day season and consequently drastically reduced the number of deer hunters in the woods. In keeping with the Commission's efforts to manage deer as a renewable

resource and to create the greatest good for the greatest number of sportsmen through managing for a maximum annual harvest, eight of the counties west of the Blue Ridge were open to antlerless shooting (hunter's choice) the last day of the season. This produced a harvest of approximately 2000 antlerless animals, a number well in keeping with the sustained welfare of the herd.

While the kill of bear and wild turkey was below that of the preceding season, the pattern is such that it appears local conditions may be responsible. Weather had some influence, particularly in the western counties, in reducing the number of hunting days. Even with a reduced bear kill Virginia is still in the same bracket with other states better known and recognized as "bear states."

Big Game and Turkey Kill, 1954 - 55

County	1952-53			1953-54			1954-55		
	Deer	Bear	Turkey	Deer	Bear	Turkey	Deer	Bear	Turkey
Accomack.....	4			7			10		
Albemarle.....	68		30	74	3	47	18		19
Alleghany.....	87	16	14	132	23	20	162	13	18
Amelia.....	56		58	86		68	85		68
Amherst.....	39	10	2	66	6	26	61	11	11
Appomattox.....	35		33	54		54	58		46
Augusta.....	1,131	105	68	635	127	129	1,103	80	82
Bath.....	917	19	48	689	30	161	1,185	19	145
Bedford.....		7	3		8	11		4	7
Bland.....	23	8		44	6		46	7	
Botetourt.....	74	34	7	113	27	19	113	20	15
Brunswick.....	18		26	18		36	17		31
Buckingham.....	173		102	219		164	225		121
Campbell.....			22			25			24
Caroline.....	514		66	638		71	762		71
Carroll.....				1			3		
Charles City.....	327		8	378		12	407		
Charlotte.....	17		58	13		80	20		53
Chesterfield.....	79		64	125		63	103		94
Clarke.....							13		
Craig.....	112	6		236	9		216	5	
Culpeper.....	31		18	48		22	49		29
Cumberland.....	45		48	80		89	68		66
Dinwiddie.....	83		55	85		65	78		82
Essex.....	108		7	93		4	125		10
Fairfax.....			7						3
Fauquier.....			27	16		38	23		38
Fluvanna.....	16		31	33		55	38		33
Frederick.....	432		15	389		86	590	1	37
Giles.....	147			205			236		
Gloucester.....	40			51			52		
Goochland.....	14		17	29		18	48		19
Grayson.....	145			169			201		
Greene.....				4			8		
Greensville.....	44		13	65		22	53		19
Halifax.....	201		115	193		118	177		69
Hanover.....	55		12	79		10	68		19
Henrico.....	9		5	16		8	30		5
Highland.....	119	11	28	149	11	75	208	5	45
Ile of Wright.....	60		3	86			92		2
James City.....	189		6	236		12	282		13
King George.....	71		11	84		24	71		14
King & Queen.....	169		15	195		20	164		13
King William.....	97		5	133		13	258		22

County	1952-53			1953-54			1954-55		
Lancaster.....	19			20			24		
Lee.....	10			14			14		
Loudoun.....			3			1			
Louisa.....	41	53	50		47	58		25	
Lunenburg.....		17			21			25	
Madison.....		1				4			
Mathews.....	12			25			27		
Mecklenburg.....	15	33	4		37	7		20	
Middlesex.....	21			17			17		
Nansemond.....	118	9	2	161	17		160	12	1
Nelson.....	19	5	22	30	5	9	44	7	23
New Kent.....	261		21	302		44	253		31
Norfolk.....	238	5		393	8		378	4	
Northumberland.....	14			22			10		
Nottoway.....		13			22				24
Orange.....	20	34		34	54	28		52	
Page.....	64	6		132	2	1	198	4	4
Pittsylvania.....		18			19				
Powhatan.....	38	51	42		50	55		37	
Prince Edward.....	13	21	21		43	19		22	
Prince George.....	544	28	513		52	345		35	
Princess Ann.....	1								
Prince William.....		28			44			36	
Pulaski.....				1		2	2		
Rappahannock.....	1		8			4			
Richmond.....	40		42		49				
Roanoke.....	9	1	13		13				
Rockbridge.....	60	25	12	107	30	54	126	22	57
Rockingham.....	256	48	8	370	32	46	462	45	17
Russell.....	1		8		7				
Scott.....	100		161		183				
Shenandoah.....	1,196	1	10	743	2	110	1,381	2	46
Smyth.....	235	2		299	7		357		
Southampton.....	350		18	435		9	421	1	19
Spotsylvania.....	37		71	61		96	83		77
Stafford.....	28		28	56		41	80		43
Surry.....	208		22	252		29	297		33
Sussex.....	586		43	488		53	285		50
Tazewell.....	30		51			49			
Warren.....	121		1	122		195			
Warwick.....	15		84			273			
Washington.....	97		139			91			
Westmoreland.....	35		58			41			
Wise.....	104		140			141			
Wythe.....	64	8	80	5		78	6		
York.....	97		4	344		11	280		7
TOTALS	10,867	327	1,608	11,807	359	2,558	14,068	270	2,027



View of the stock watering pit where shark and whale fossils were discovered. Uncoverings were made beneath 8 feet of earth.



Layers of fine sand and sedimentary clay covered the fossil findings.



Mrs. C. W. Barnes of Courtland, Virginia, and *Virginia Wildlife* editor J. J. Shomon of Richmond examine some fossils.



Group view of tertiary shark's teeth and fossil fragments of whale vertebra, teeth and jawbone.

fossils. Recent unearthings from a stock watering pit in Southampton County brought forth new evidence of prehistoric animal life in coastal Virginia. Excellent fossil fragments in the form of teeth of the tertiary shark (*Carcharodon megalodon*) were found on the farm of Mrs. C. W. Barnes near Courtland, Virginia, as were certain bone structures and teeth of the extinct toothed whale.

When dragline equipment began uncovering strange pieces of petrified bone, the curiosity of Mrs. Barnes was aroused. She had read in *Virginia Wildlife* something about prehistoric animal life in Virginia as it roamed the countryside a million years ago and decided to put in a call to the Virginia Game Commission in Richmond to see if the fossil-like materials could have some meaning. This aroused the interest of the *Virginia Wildlife* editor and the Commission's photographer who shortly went down with pick and shovel and brush to verify the findings. In their diggings they uncovered additional evidence of fossilized bone structures. A pile of petrified pieces of whale vertebra, teeth and jaw bones were found, as were dozens of petrified clams.

The most interesting discovery was the huge triangular tooth of a tertiary shark with the original enamel still intact.

The fossils were identified as coming from the *Miocene* period, which in the geologic timetable is listed as between 20 and 30 million years ago. The findings were corroborated by a check with the Division of Paleontology at Virginia Polytechnic Institute and finally by experts at the Smithsonian Institution in Washington.

Dr. Charles L. Gazin, curator of vertebrate paleontology of Smithsonian Institution, said that the findings were not unusual since much of the tidewater area of Virginia can be expected to reveal fossils of both prehistoric vertebrates and invertebrates—early animals that plied the coastal areas about 25 million years ago.

Certain tooth-like fossils which were believed at first to have belonged to a prehistoric sea cow were identified as petrified teeth of the prehistoric toothed whale. The enamel unfortunately had disappeared and only the dentine or inside section of the tooth remained. Dr. David H. Dunkel, associate curator of vertebrate paleontology at Smithsonian Institution and an authority on fossil fishes, believed there was no question but what these prehistoric sea mammals lived in considerable numbers along our Atlantic coast. The York formation in the tidewater is particularly noted for its abundant marine fossils from the *Miocene* period.



Opportunities for outdoor recreation are unlimited on the national forests. The Jefferson is no exception.

The Growing Recreational Use on the Jefferson National Forest

By GEORGE B. P. MULLIN
Forest Supervisor

RECREATIONAL use on the Jefferson National Forest has increased by leaps and bounds during the past ten-year period. Use by deer hunters alone has increased 400 percent and the deer kill 1000 percent. There has been a corresponding increase in the use by trout fishermen. Other forms of recreational use have made less spectacular gains, but they have shown a steady increase during the same period.

The Jefferson contains approximately 600,000 acres of publicly-owned forest land in 19 Virginia counties. It extends from the James River near Natural Bridge, southwest approximately 200 miles to the borders of Tennessee and Kentucky. It can be reached from any part of southwest Virginia and parts of Tennessee, Kentucky, North Carolina and West Virginia within a few hours driving time. One of the first tracts of land approved for purchase by the National Forest Reservation

Commission is in the southern part of this Forest. This boundary includes the two highest mountains in Virginia: Mt. Rogers, with an elevation of 5719 feet, and White Top, 5580 feet. The so-called Weeks Act, authorizing the purchase of national forests for the protection of the headwaters of navigable streams, became law on March 1, 1911. It is interesting to know that the people of Virginia were among the first to recognize the need for national forests and take positive action to encourage them. The General Assembly of Virginia approved an act on February 15, 1901, "to give consent by the State of Virginia to acquisition by the United States of such lands as may be needed for the establishment of a national forest reserve in said state . . . to perpetuate these forests forever and preserve the headwaters of many important streams, and which will prove of great and permanent benefit to the people of the

State." It was not until four years later, February 1, 1905, that the U. S. Forest Service was organized as such in the Department of Agriculture.

The Jefferson National Forest is administered from a Supervisor's headquarters in Roanoke, and, for convenience of administration, is divided into five ranger districts: the Glenwood District, headquarters at Natural Bridge; the New Castle District, headquarters at New Castle; the Wythe District, headquarters at Wytheville; the Holston District, headquarters at Marion, and the Clinch District, headquarters at Norton, Virginia. The land thus far acquired has been largely along critical ridges and upper slopes, much of it difficult of access and all of it in need of protection from fire. Though often referred to as "wild land," this and other areas in the national forest system can be, and are being, managed to produce at the same time abundant timber, water, wildlife, recreation and other resources of high social and economic value.

Recreation is one of the more important forest resources. Fortunately management that is most favorable for the production of water and timber is good management for the recreation and wildlife resources. One of the first jobs in resource management is water control. Thousands of springs, runs, and creeks have their beginnings on the national forest areas and adjacent private lands. Six major waterways, the James, the Big Sandy, the Holston, the Roanoke, the New, and the Clinch Rivers pass through these areas and receive part of their water load from Jefferson drainages. The aim is to manage the land so as to reduce flood danger from surface run-off and so as to encourage the greatest possible seepage into the earth at or near the point where the snow or rain falls on the lands.

This type of management produces the most productive fishing waters by holding erosion to a minimum, and contributing to the stabilization of water flow and temperature. It provides well distributed water for wildlife and scenic attractions for the people interested in general forest recreation. A coordinate responsibility is

Hiking is a growing recreational use on the national forests. There are plenty of trails and fire lanes for those who wish to explore forest country on foot.



Trout fishing is one of the great recreational pursuits on Virginia's national forests. Forested watersheds and good forest management insure clean trout water.

to maintain the productivity of tree-growing lands so as to produce a continuing harvest of timber. Many valuable tree species, such as white pine, hemlock, yellow poplar, oaks, hickories, and other Appalachian hardwoods grow well on these mountain lands. Domestic-use wood permits and small sales to nearby residents and larger sales to timber operators help greatly toward maintaining the forest products economy of area communities. All cuttings are selective, designed to maintain or improve forest productivity, to avoid dangers to watershed control and to improve the habitat for wildlife.

Wildlife is both a valuable and popular forest crop and it can be maintained and encouraged by careful forest management. The success of the wildlife work on the Jefferson stems directly from the cooperative wildlife management program between the state, represented by the Virginia Commission of Game and Inland Fisheries and the U. S. Forest Service. The George Washington National Forest, located north of the James River, participates with the Jefferson National Forest in this cooperative program. Biologists and resident wildlife managers are assigned by the state Game Commission to work with the foresters on the land. Joint state agency and national forest plans are made and revised annually. As a result, effective protection and environmental improvement measures are now being effected. The program provides improved conditions of food, cover, and water for fish and all game birds and animals. Small clearings are scattered through the forest to provide sunlit areas, forage, insect life and seeds for small game as well as edge-growing browse for deer. Grasses and

grains are sown in trails and open spots for grouse and wild turkey food. Four hundred miles of cool, forest-shaded fishing streams are maintained, improved and stocked annually. Many other management and research measures, jointly undertaken are restoring an inviting wildlife population and are resulting in a popular hunting and fishing haven. The program has achieved national recognition and is supported by funds from Pittman-Robertson, state, and national forest stamp monies.

The following table is indicative of increased game population and hunter use:

Legal deer kill in Jefferson National Forest counties for past 10 years. Figures are provided for each year since the deer season opened to show comparisons and trends.

County	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Bland	•	9		18	11	15	16	23	44	46
Botetourt	•	17	9	17	26	38	62	74	113	113
Craig	•	24	20	30	37	71	113	112	236	216
Giles	•	19	15	36	38	66	112	147	205	236
Grayson	33	57		72	60	84	138	145	169	201
Lee	•	•	•	•	9	3	9	10	14	14
Roanoke	•	15	7	3	4	6	14	9	13	13
Russell								1	8	7
Scott	22	29	58	61	67	64	132	100	161	183
Smyth	23	61	73	112	95	154	225	235	299	357
Tazewell	•	27	53	19	8	33	21	30	51	49
Washington	27	31	51	61	64	90	72	96	139	91
Wise	53	54	82	75	85	83	109	104	140	141
Wythe	12	12	51	18	34	39	48	64	80	78
	170	355	419	522	538	746	1071	1150	1672	1745

•—No season

1945 to 1949 incl.—2 day season

1950—3 day season

1951—6 day season in Craig, Roanoke, & Botetourt; all other counties 4 days

1952 & 1953—6 day season all counties

1954—6 day season all counties, 82 does killed under permit in Scott-Wise county area

During this same ten-year period, the sale of National Forest Stamps (required for hunting or fishing on Virginia National Forests) has increased from 17,608 to 65,325.

Opportunities for outdoor recreation are almost unlimited. They are informal, inexpensive and available for the enjoyment of everyone. There are facilities for camping, swimming and picnicking at the Cave Mountain Lake area in Arnold's Valley near Natural Bridge and at the High Knob area near Norton. Several smaller picnic areas are maintained on other parts of the forest. Camp fire permits are issued for camping or picnicking on most of the forest, but are not required for use on the developed areas. Forest roads and trails supplement the state highway system and provide access to numerous areas of scenic beauty. There is mountain climbing and hiking for the more vigorous and just plain quiet restful solitude for those who prefer that. Photographers, geologists and naturalists find ample subject material on the mountain roads and trails. The recreational resources of the Jefferson and the country's other national forests are yours to use and enjoy.

Commission's Efforts to Keep the Public Informed

The educational work which the Commission of Game and Inland Fisheries has conducted in recent years has paid handsome dividends. This work is being constantly intensified with realization that there still remains a great deal to be done.

Effort has been made, with a high degree of success, to set up a strong businesslike agency capable of furnishing informed leadership in a highly complicated field of activity. Especial effort has been made to give all classes of citizens a thorough understanding of the various things being attempted. Public support is necessary in everything.

Along with factual information regarding activities of the Commission, determined efforts are being made to lead the people of Virginia into a realization of the vast importance of the outdoor recreations and the resources upon which these recreations depend.

Realizing the difficulties in reaching all the people with information, the Commission has been placing more and more emphasis upon its educational activities, and a strong and well-staffed education division within the agency is being constantly strengthened. All personnel also are being brought more aggressively into educational work.

The press of the state, powerful in its influence, is becoming more and more cooperative and is laying increased accent upon matters pertaining to the outdoors and the conservation of all of the renewable natural resources.

The Commission is constantly broadening its efforts in the educational field through use of the printed word, radio, television, public addresses, exhibits and the visual appeal by means of motion picture photography. Numbers of demonstrational areas have been highly effective in giving insight into effective conservation practices.

All along the line the Commission is seeking to carry to the people the findings in scientific research and results of practical experience in other States in solution of the various problems that arise. Wildlife management is steadily gaining in effectiveness through scientific study and effort is made to acquaint the public with the things that are being learned.

The sportsmen's organizations are becoming more and more helpful in many ways. In many cases they are particularly useful in analyzing the educational material of the Commission and passing this along to citizens of their communities.

Back in 1918 when the Commission set up its published long-range program—the first the state ever had—it was hoped that there might be an awakening of general interest in wildlife conservation. An aggressive crusade was inaugurated in the belief that no stone will be left unturned to develop the full potentialities of Virginia for more abundant wildlife.

The people of the state have responded with enthusiasm and there is every reason to believe that the movement will gain momentum. Public information and education are recognized as of prime importance.



The tidal marsh country is a mecca for wildlife. Left to right: raccoon, snowy egret, clapper rail.

Wildlife Along the Seashore

If you're seeking variety in animal life, try visiting the marsh country of the tidewater. No section of the state sports more colorful wildlife.

PROBABLY no area in Virginia is as rich in animal life as the marsh and beach country of the tidewater. Here the various herons pose on stilts in the spartina, the secretive clapper rail sounds his clattering castanets, and the slithering otter makes his tortuous way among the tidal creeks in search of migrating fish. Further seaward, toward the crash and boom of the pounding surf, other wildlife species gather to feed on crustaceans and mollusks, and everywhere birds can be seen on dexterous feet and buoyant wings and giving vent to their voices in strange outcry.

The blue waters of the Chesapeake Bay are especially conducive to great communities of marine fauna, small invertebrate animals, that furnish food for fish, mammals, and birds. The high tides and waves deposit this lesser life along the sand beaches and mud flats, spreading a banquet for all the higher forms that would come and get it. Animals like the raccoon and the muskrat in the brackish marshes grow fat and lustrous from the rich fauna and flora that abounds. The otter dines on countless fish that migrate into the inlets, its coat a glossy, thick velvet from leading a salubrious life in the marshes.

The clapper rail or mud hen, Virginia's second largest rail, lives and breeds in the spartina grass. During mild winters it remains in our saltmarsh, but when cold and severe weather strikes, it may leave for parts further south. Their nests are peculiar things under clumps of trash of sea weed and dry marsh grass, with a canopy over the nest like a hut. The average nest contains from 8 to 13 eggs. The young, jet black when hatched, leave the nest to follow the parents as soon as they dry. Sometimes

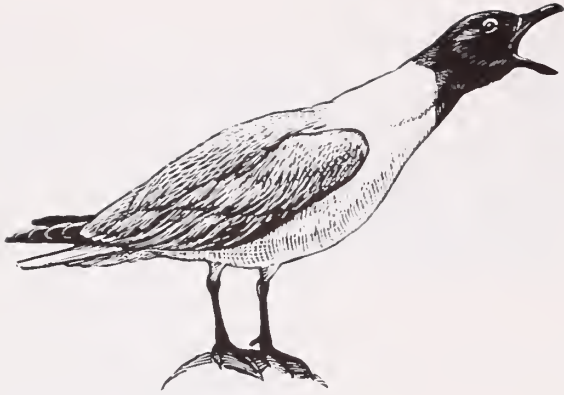
two settings of eggs are laid by many birds when storms wash out the original nest. Seed and insects as well as periwinkle snails form the greater part of their diet. All of the rails are hunted in season during high tides and furnish sport for many Virginians.

Among the off shore islands of Wreck, Cobb's, Pig, Hog, and others, numerous shorebirds make their nesting grounds. Occasionally their nests and young are destroyed by unseasonable weather, but their numbers are holding up and even increasing.

It is roughly 75 miles from the Maryland line to the tip of Fisherman's Island, a stretch of sea islands and ocean sand unlike anything found still in a primitive state in coastal America. Here the colorful big-beaked oyster-catcher wanders among the shell-strewn beach, the lesser yellow legs trots in ballerina style, and the ever present sanderling keeps playing with the surf. Other shorebirds—the willet and gulls and terns and the many sandpipers—come and go, hawking their cries to the crashing surf, then move on.

Further inland over the spartina marsh, the ever-soaring osprey screams and dives and soars and occasionally tiffs with his big brother, the eagle, who more often than not robs it of its morsel of fish in midair.

The lumbering bald eagle is a common resident along the coast. Its nest is a huge affair of sticks piled in the crotch of some live or dead pine and can be seen at great distances. A pair of eagles will use the same nest year after year as they are supposed to mate for life or as long as each may live. The young do not attain the showy white head and tail until the third season, and are often mistaken for the golden eagle. Our national emblem



The laughing gull is Virginia's most interesting gull. Great flocks now can be seen on Virginia's eastern shore and along the shores of the Chesapeake Bay.

and federally protected, it is still listed within the state under an old law as an "undesirable species." Many now believe this should be changed.

One of the more interesting birds to see in the salt marsh country is the laughing gull. True to its name, it frequently can be seen perched on buoys and channel markers, its black head screaming a laugh skyward, pumping its neck and body like an auctioneer. Easily distinguished from other gulls by its smaller size and black head, dark back and wings, it calls almost incessantly. The adults in winter lose the black color of their heads but regain their characteristic color in the spring. A few stay around Virginia shores all winter, but the bulk of the flocks leave in cold weather, returning as early as February. Like most gulls, this interesting gull thrives on dead fish, aquatic animals, small rodents, and insects.

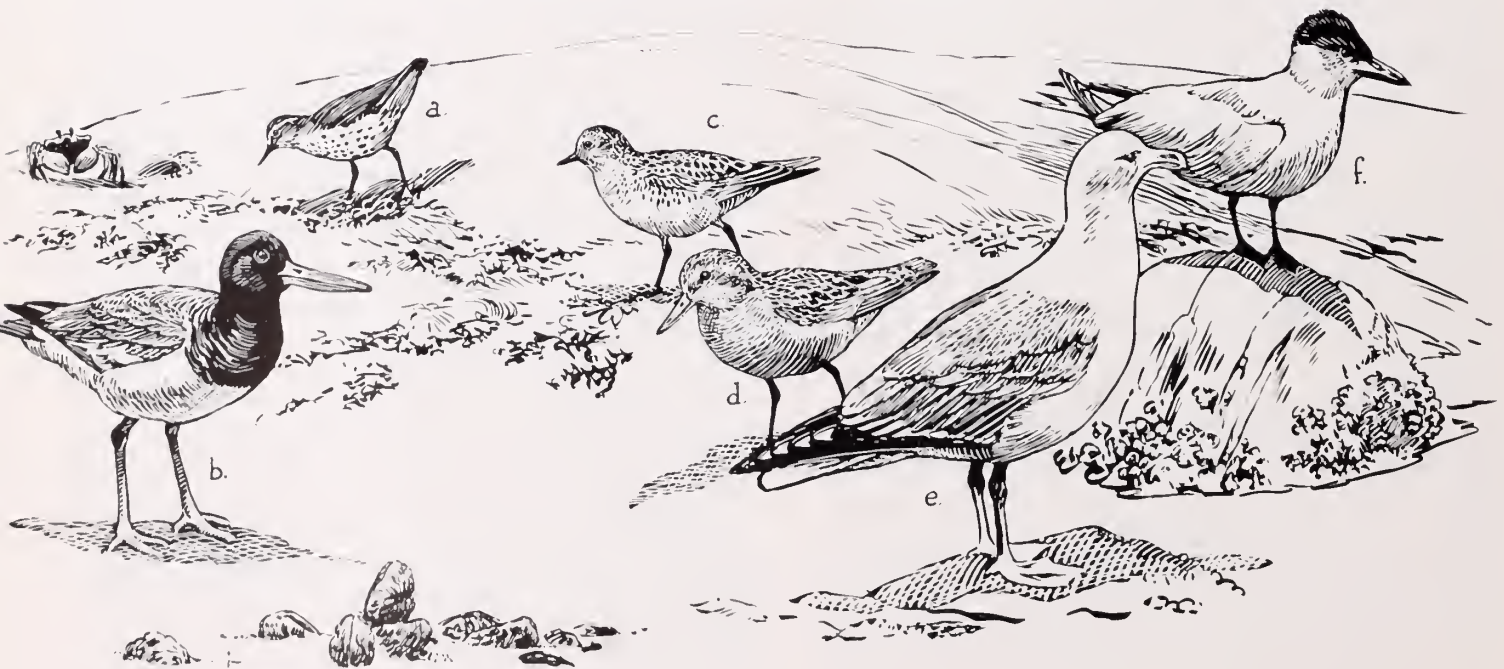
Our gulls and terns number 18 kinds (eight gulls, nine terns, and one black skimmer which is neither a gull nor a tern). The gulls can be distinguished from the terns in several ways. They are long-winged swimming birds with perfectly amazing powers of flight. They differ from terns in being larger, heavier, and having bills with a slight hook. Gulls fly with their bills pointing ahead in flight, while those of the terns are straight-pointing and usually dip downward in flight. Both gulls and terns are "scavengers of the sea," and as such alone are worthy of protection.

The black skimmer is in a class all its own. It is one of the most peculiar of birds. Its beak instead of being round and hinged at the bottom, is flat like a knife and is hinged at the top. Furthermore, the lower mandible extends beyond the top one by a third. When a skimmer wants to dine on some crustacean or mollusk, it must first turn its head on its side. Often seen plowing the surf with its scissor-bill, it is one of nature's most interesting oddities. It nests in great flocks on Wreck Island and forms a distinct segment of the beach fauna of Virginia's sea coast islands and beaches.

The sea coast marshes and islands are not the only places blessed with an abundance of wildlife. Go to any tidal area in the tidewater and you will find life in great profusion. All of the estuaries and tidal creeks up and down the Chesapeake Bay have their full quota of marsh mammals and birds and fish, not to speak of thousands of lower forms of animals, all interesting, all plainly visible for man to see and study.

Mobjack Bay, the Severn River, the lower James, Rappahannock, Potomac and York, the Guinea Marshes near Mathews, Gwynn Island, Messick, Ingram Bay, Reedville, Urbanna, Cape Henry, Fleets Bay, and Smith Point, all these places offer much to the curious of mind and heart. All one needs to do is go and see.

Variety on the beach: (a) least sandpiper, (b) oystercatcher, (c) sanderling, (d) knot, (e) herring gull, (f) royal tern.



One of the most unique areas for bird observation is the west Chesapeake section known as the Guinea marshes. The picturesque marsh country is replete with avifauna of all kinds—waterfowl during fall and winter months, rails, shorebirds, and great flocks of gulls.

Accessible only by boat, the marshes of the Guinea area stretch for miles around the main point between the York and Severn rivers in Gloucester County. Final jumping off place can be either Maryrus, Sandy Point, or the public wharf at Brown Bay. The Gloucester County highway map shows the area in a general way and can be had from the Highway Department in Richmond. The best map, however, is the 75 cent map put out by the U. S. Coast and Geodetic Survey of Washington, D. C., 1913 edition, map No. 491 called the Mobjack Bay and York River section. It is well worth the cost.

There are many other areas that are just as fascinating. For brackish marsh wildlife there's the Dragon Swamp area further north in Essex and Middlesex counties.

Home of varied wildlife and game fish, it is one of the few remaining primitive areas in Virginia and the Atlantic Seaboard. The winding swampland river remains a natural biotic wilderness dear to the heart of all conservationists and outdoorsmen. The swamp covers some 100 square miles—roughly 64,000 acres—of lush throbbing, forbidding, semi-tropical water-land.

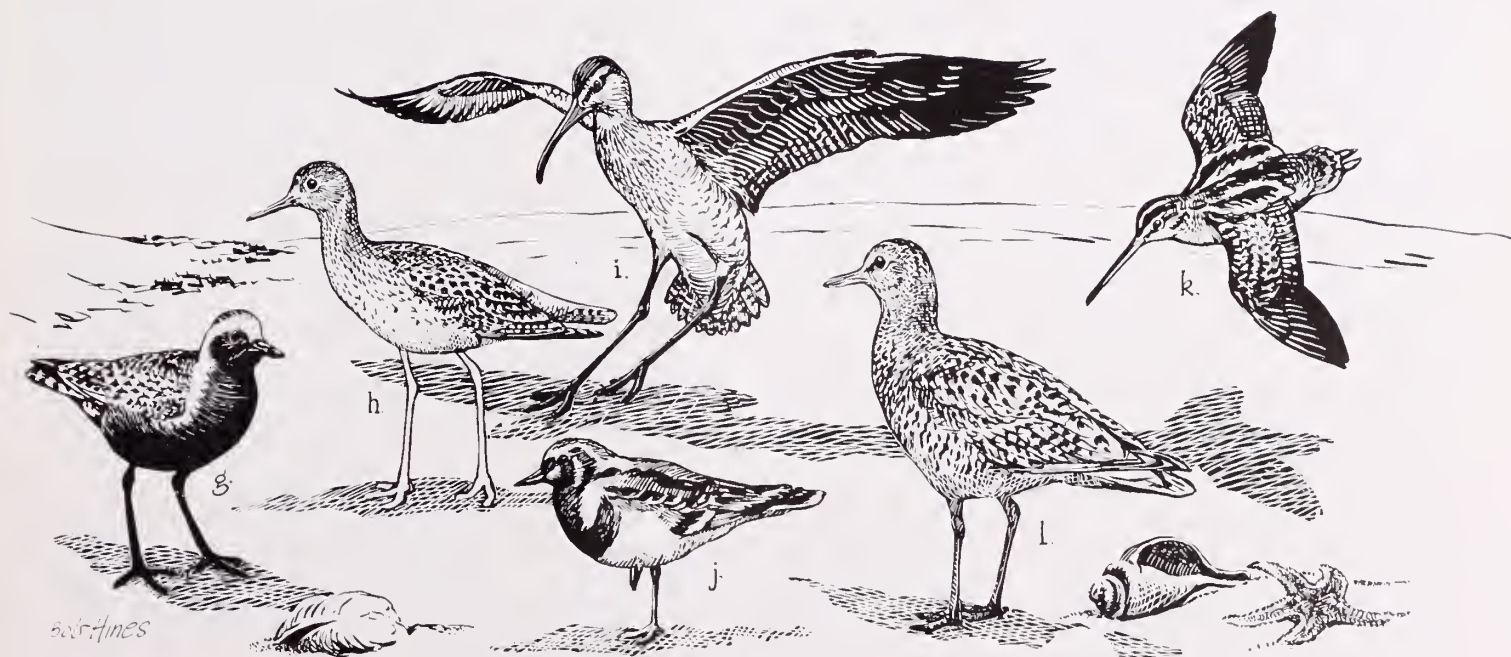
For ducks and geese there's Back Bay, just west of Virginia Beach. Here is the gathering place of winter waterfowl, the home of the protected snow goose, and the famous refuge grounds of the U. S. Fish and Wildlife Service.



The osprey or fish hawk is as much a part of the marsh as the spartina grass itself. It is largely beneficial.

Yes, the wildlife along our seashore and in our marshes is as varied as it is interesting. There is much to see: moving fish, colorful shells, strange crawling creatures, soaring birds, and furbearers. Each has its own niche in the animal kingdom. With a little effort and a good field guide it is interesting to learn what each species is and how it fits into the fascinating world of wildlife around us.

(g) black-bellied plover, (h) lesser yellow legs, (i) curlew, (j) ruddy turnstone, (k) Wilson's snipe, (l) willet.





Salute to the Forest Service At Its Half Century Mark

We salute the United States Forest Service on its golden anniversary, for 1955 marks the 50th anniversary of its establishment in the Department of Agriculture. It was created February 1, 1905, during the presidency of Theodore Roosevelt, by the merging of the earlier Bureau of Forestry and the forestry division of the General Land Office. As early as 1879 forestry had become the concern of the federal government, but there was no well-integrated policy with long-range objectives until the development of the present Forest Service.

First chief of the Service was Gifford Pinchot, who had previously been head of the Bureau and was the "first native American to obtain professional training in forestry." Professional training in forestry was still a very new idea in the United States. The first four-year courses had been started at Cornell University in 1898 and in the Biltmore School of Forestry in North Carolina. The Yale Forest School was started in 1900. More than 21,000 have completed regular four-year courses in forestry since 1905, with more than 4,000 going on to earn master's or doctor's degrees in the field.

The work of the Forest Service has progressed principally along three lines: administration of the National Forests which had been established as "Forest Reserves" under the General Land Office in 1891; cooperation in forestry programs with the various states and private forest owners, with some 5,000 landowners participating in the "tree farm" program; and research in forest and range management and wood utilization. The Forest Service now maintains nine regional forest and range experiment stations in this country as well as

forest research units in Puerto Rico and Alaska.

In early days of the Service, often a ranger would tackle a large fire single-handed and with ax and shovel do what he could to check its spread. Many fires burned for weeks or months, until extinguished by rain or snow. Today both federal and state fire control is highly organized, with radio communication, mechanized fire-fighting equipment, fast transportation, including parachuting smoke jumpers. Probably no child in America needs to be told about "Smokey the Bear."

Lynchburg Now Nation's Largest Izaak Walton League Chapter

December 31, 1951, saw the Lynchburg Izaak Walton League Chapter reach a long sought goal. Of the 589 active chapters throughout the country, Lynchburg is now the largest, with a total enrollment of 1,374 members.

During the twelve years since its founding, this group has extended its influence in conservation policies and practice within the Commonwealth. Currently its efforts are largely being directed toward pollution abatement in Virginia streams.

The focal point of this chapter's local activities is found at Walton Park, its 171 acre tract of second growth timberland, purchased in 1950. The members' efforts in the first five years have brought Walton Park a long way toward the objective of furnishing a fine example of conservation in action. Boasting a well stocked six acre lake with docks and bathing beach, bathhouse and concession stand, outdoor fireplaces and barbecue pit, skeet field and rifle range, Walton Park now represents a capital investment of approximately \$20,000.

Featured in its educational program have been regular talks by members before civic clubs and schools. Conservation movies supplement this important public relations work. Nationally known speakers and writers have been brought to Lynchburg for free public addresses. Such well-known figures as Havilah Babcock and Archibald Rutledge have been so sponsored. During the summer, qualified members conduct regular courses in water safety and safe gun handling. Special attention is given the youngsters, who are, of course, Waltonians and conservationists of tomorrow. In this direction, the chapter also donates an annual scholarship for conservation study to Lynchburg College.

Gooney Birds Are Not So Looney

Gooney birds (albatrosses) are not so looney after all, say U. S. Fish and Wildlife Service biologists Philip A. Dumont and Johnson A. Neff who investigated the bird hazard to military aircraft by the gooneys on Midway Island in the Pacific.

Though they may be naïve enough to brood a light bulb instead of an egg, they are not really silly enough to perch on moving aircraft wings, nor do they fly out to meet planes so they can hitch a ride back, nor crash through windshields.

They have, however, been credited with 10 plane strikes, which damaged propellers, wing flaps and the leading edges of wings or stabilizers. Dumont and Neff found that damage was not caused particularly by birds nesting along the runways, but rather by birds in the air below 200 feet.

Partially successful efforts to move nesting sites by egg destruction have been so far the only solution to the problem on which the biologists are still at work.

Brush Control Sprays and Wildlife

The first year of a five-year experiment being carried out by Pennsylvania University's School of Forestry indicates that brush control sprays, properly applied, do not directly harm wildlife and may actually encourage it through the development of game food and cover.

Cooperating with the School are the Pennsylvania Game Commission, the Pennsylvania Cooperative Wildlife Research Unit and four commercial interests who are supporting the scientific survey, hoping to get an answer to the question: "Can brush be controlled chemically without injury to wildlife?" Their contention has been that the right chemicals properly applied do not hurt wildlife. It is hoped that four more years of observation will quiet the fears of sportsmen, many of whom suspect all sprays as threats to animal life.

Edminster on Game Birds

Frank C. Edminster, regional biologist for the U. S. Soil Conservation Service, Upper Darby, Pennsylvania, has come out with another fine book on wildlife which supplies a long-felt need for a textbook for reference use and for college courses in conservation and game management.

His latest, *American Game Birds of Field and Forests* (Charles Scribner's Sons, New York, N. Y.) following on the heels of his fine book *Hunting Whittails*, is a monumental piece of work covering 490 pages and numerous photographs, diagrams and charts.

The author discusses such things as origin, distribution, habits and management of the following species: ring-necked pheasant, wild turkey, the several grouse species, prairie chicken, the different quail, partridge, doves, band-tailed pigeon, and woodcock.

Nature Camp Plans 1955 Program

Mrs. Fred Schilling, executive director of the Nature Camp of the Virginia Federation of Garden Clubs, has announced the camping schedule for the summer of 1955. In order to prevent repetition, there will be more closely graded courses of instruction

this year, with an opportunity for intensive study in special subjects available to senior campers who have previously attended Nature Camp at Vesuvius.

The camp is located in a mountain valley near Vesuvius, on Big Mary's Creek in the George Washington National Forest. Its program is planned to stimulate young people's interest in our renewable natural resources, to offer concentrated instruction in their intelligent use and to provide comradeship with those of similar interests.



"You'll find our fishermen a pretty nice congregation. . . They never take over the limit."

Boys and girls from grades five through senior high school are eligible to attend. The camp is for those who are interested in nature study and have leadership ability. Camping dates for 1955 are June 19-July 2 for grades 10, 11 and 12; July 3-16 for grades 7, 8 and 9 and two periods, July 17-30 and July 31-August 13 for grades 5 and 6.

Daily field trips are conducted by the instructors and provide opportunities to study birds, insects, wild flowers, plants and geology. Astronomy is another popular subject. Personnel from the Commission of Game and Inland Fisheries, the Virginia Forest Service and rangers from the George Washington National Forest assist with lectures and field trips.

Swimming, hiking, picnics, camp-fire games, music and folk dancing are among the recreations provided.

Further information may be secured by writing to Mrs. Schilling at Avon, Virginia.

Audubon Nature Program Is Outstanding Success

A long-range program of supplying the public with accurate and interest-generating monthly booklets on nature and conservation subjects has been launched by the National Audubon Society and Nelson Doubleday, Inc.

Each month the combined resources of the two organizations produce a booklet and a set of 30 or more reproductions of color photographs that may easily be inserted in the booklet.

A recent publication in the series was titled "Birds of Prey" and was prepared by Kenneth D. Morrison, Editor of Audubon Magazine. It traces the growing public awareness of the important roles played by hawks, owls, eagles, etc., in the overall economy of nature and concludes with individual accounts of the birds pictured in the 33 color prints that accompany the booklet.

The National Audubon Society stated that the more than 150,000 persons who now receive the Audubon Nature Program booklets each month are building valuable libraries of authentic information about the out-of-doors. Each author is an authority in his field and the text is carefully checked for scientific accuracy. The subject matter is presented in an easily-readable style that permits it to be shared by entire families.

Recent Nature Program booklets have covered such diverse subjects as Life in a Woodland Pond, Camouflage in Nature, Butterflies and Moths, Nature's Architects, and Life in Shallow Sea Water.

The Society believes that the response to the Audubon Nature Program reflects the rapidly growing public interest in nature and conservation and that it indicates the need for materials that will help both young and old to understand and enjoy the out-of-doors. Anyone may participate in the program, which has no relation to membership in the National Audubon Society.

Further details about the monthly booklets and prints may be obtained by addressing C. Earl Cooley, Director, Nelson Doubleday Nature Program, 575 Madison Ave., New York.



New Biologist for Southwest Virginia

John McLoughlin, of Christiansburg, Montgomery County, has been appointed biologist for the Southwest District by the Commission of Game and Inland Fisheries. He will share duties in the district with Charles H. Peery III. Dick Cross is Supervisor for the District.

The twelve units of the Jefferson National Forest have been served by Peery and the Roanoke office, of which nine have been serviced by Peery, including Poor Valley, Tazewell and Bland counties, Gullion Fork, Wythe, Hurricane, Smyth, Feathercamp, Washington, High Knob, Wise and Scott and the Breaks of Cumberland, Dickenson.

McLoughlin, who will now share duties with Peery, will have his headquarters at Christiansburg. He is a graduate of Virginia Polytechnic Institute in the field of wildlife conservation and was assistant county agent of Pittsylvania County before his appointment by the Game Commission.

A Market for Snapping Turtles

One of our field men sends us news of a steady market for snapping turtles. He received in the mail a notice from J. W. Burnham of Chadds Ford, Pennsylvania, agreeing to purchase at regular fixed intervals and the year round, all the live snapping turtles offered, these turtles to weigh over four pounds and not over sixty pounds alive.

The offer is good for the common snapping turtle (*Chelydra serpentina*) and the so-called alligator snapping turtle (*Macrochelys termiuckii*) and for no other type of turtle.

A catch in the questionnaire may be Number 5 which asks "What is the current market price for snappers in

your section?" If you are interested, write to Mr. Burnham for the details of his project.

Eleven was His Lucky Year

Eleven-year-old Nick Dinkins had plenty of buck to show for his first hunting trip with his father at "Hawfield" in Orange County. He bagged the big 205-pounder with a slug fired from a .410 shotgun at 50 yards. His father, Guy Dinkins, an enthusiastic hunter, was proud of his boy's trophy, but didn't even get a shot himself.

Guy H. Lewis, Jr., who sent us the story, says that it has been the practice of his company to hold a two-day deer hunt on the property each year and that Nick was the son of one of the men.



Young Nick Dinkins collected a fine trophy buck on his very first deer hunt.

Swink Begins Predator Control Work

F. Nelson Swink, formerly with the Game and Inland Fish Department of Maryland, and a graduate of Virginia Polytechnic Institute, was appointed to begin predator control work in Virginia beginning February 28. His headquarters are in Harrisonburg, Rockingham County.

His most immediate work will be educational in connection with rabies control. Through local authorities

particularly in those counties where rabies is prevalent he will give instruction as to trapping rabid foxes and other animal carriers of the disease.

The work is being carried out on a cooperative basis. At the last session of the General Assembly, the Legislators appropriated the money and directed the Commission of Game and Inland Fisheries to put in the field a man trained in predator control.

The State Department of Agriculture, through its Veterinary Division, will defray Swink's lodging and subsistence. The U.S. Fish and Wildlife Service will supply transportation and the Commission will pay his salary.

New Definition for Farm Pond

The Winston-Salem (North Carolina) *Journal and Sentinel* not long ago carried a full page spread on farm ponds. Chester S. Davis got the discussion off to a lively start with his pungent definition: "Having a farm pond is something like having a wife; they aren't too hard to get, but they are hell to manage."

Wildlife Week A Success

Word from field cooperators has it that the Wildlife Week proclaimed by Governor Stanley for March 20-26 proved the most successful yet held.

Thousands of pieces of literature were distributed on "wetlands conservation" and numerous clubs and individuals arranged programs and displays emphasizing the need for wildlife conservation.

Wildlife Week chairman in Virginia was J. J. Shomon. The Game Commission cooperated in the promotion of the special Week with assistance from the Virginia Wildlife Federation and helpful material from the National Wildlife Federation.

FROM



BUSINESS REPLY ENVELOPE

FIRST CLASS PERMIT NO. 1648, SEC. 34.9, P. L. & R., RICHMOND, VA.

VIRGINIA WILDLIFE

Commission of Game and Inland Fisheries

P. O. Box 1642

Richmond 13, Virginia

Wildlife Questions and Answers

Ques.: How many fawns does a doe deer produce each year?

Ans.: Does usually have one fawn the first breeding year and, normally, twins thereafter.

Ques.: Can you clarify the Virginia-Maryland boundary line relative to hook and line fishing in the Potomac River?

Ans.: There is a boundary line between Virginia and Maryland, in the Potomac River, beginning at Smith Point on the Virginia shore as the Potomac enters Chesapeake Bay and it runs, head point to head point on to Jones Point at the District of Columbia. All the waters in the coves and creeks on the southern side of the Potomac River and inside this imaginary line between head points behind the Maryland-Virginia line are considered to be Virginia waters. All waters at the District of Columbia come within the jurisdiction of the District. Above the District of Columbia line and extending to the West Virginia line, Virginia has her eminent domain in the soil on the Virginia side to the low water mark. Maryland controlling the rest of the river. Virginians can fish on their side of the river to the low water mark with proper Virginia state or county license. This right of Virginians to fish from Virginia soil was first defined in article seven of the Compact of 1785.

Ques.: Are there more plants or animals in the world?

Ans.: There are not nearly as many kinds of plants as there are kinds of animals in the world, or at least not so many have been discovered so far. With the aid of a microscope and in some of the more remote parts of the world, there will undoubtedly be a great many more plants discovered, but it is unlikely they will catch up with the animals. At present, about 325,000 kinds of plants are known as opposed to about a million kinds of animals.

Ques.: Is the starling one of our native birds?

Ans.: No, the starling, which has become a pest bird over most of the eastern United States, is not a native bird. The hordes we now have descended from 60 birds brought from Europe and released in New York's Central Park in 1890 and possibly from other unrecorded releases elsewhere. Along with the English sparrow and the carp, the starling is an example of the bad results which may follow the introduction of non-native wildlife species.

Ques.: How did English setters get their name?

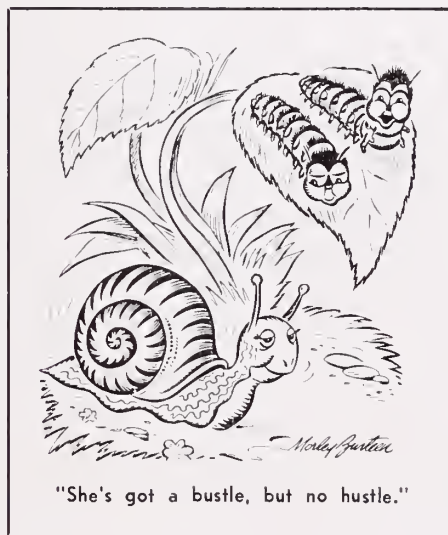
Ans.: The name of the setter dates back to the days when birds were taken with nets and the dogs were trained to crouch or "set" upon finding them.

Ques.: Can you tell me the size of the world's record brook trout?

Ans.: Yes, the record brook trout weighed 14 pounds, 8 ounces. It was caught in July 1916, in the Nipigon River, Ontario, by Dr. W. J. Cook.

Ques.: Are all crows black?

Ans.: No, not all crows are black. The Clark's crow, named after the explorer of the Lewis and Clark expedition, is a gray and white bird, with black trimmings.



Ques.: Can you tell me what is the most important fur-bearing animal in Virginia?

Ans.: The muskrat is today the most important fur-bearer in the state. The otter and the beaver have more valuable fur, but in the aggregate their importance is far below that of the muskrat. There is a very limited trapping season on "nuisance beaver," but they do not have the economic importance which was formerly theirs.

Ques.: How many national wildlife refuges are there?

Ans.: There are 272 in the continental United States, Hawaii, Puerto Rico, and Alaska, covering an aggregate of about 17,409,968 acres, where migratory waterfowl, rare wildlife species and other wild creatures are protected.

Ques.: Please tell me what restrictions there are against the sale or transportation of animals into or out of the state of Virginia?

Ans.: All wild birds and wild animals native to Virginia are under the jurisdiction of the Commission of Game and Inland Fisheries. The law provides that under permits certain wild animals and birds may be held for breeding and liberation to increase the supply, but such liberation shall be under the direction of the Commission. It is unlawful to hunt trap, take, capture, kill, attempt to take, capture, kill, possess, offer for sale, sell, purchase, deliver for shipment, cause to be shipped, deliver for transportation, transport, cause to be transported, carry or cause to be carried, by any means whatever, receive for shipment, transportation or carriage, or export or import, at any time or in any manner, any wild bird or animal or the carcass of any part thereof, except under permit for taxidermy or scientific collecting.

Ques.: What makes a plant turn toward the light?

Ans.: A plant turns toward the light because the light reduces the concentration of growth hormone, or auxin, on the more brightly lighted side of the stem. As a result, the darker side grows more rapidly and the stem bends. The light stimulus acts on the terminal bud where the auxin is produced.

Ques.: Has anyone ever figured out how much a black snake is worth in rodent control?

Ans.: Government experts have estimated the annual value of a single black snake as approximately \$3.75 in rodent control.

Ques.: What is the largest lake located in a single state?

Ans.: Moosehead Lake, Maine, is the largest body of fresh water in the United States lying within one state. It has an area of 74,800 acres and a maximum depth of 246 feet. Air distance across the lake is over 30 miles and the irregular boat route is more than 40 miles.

Ques.: Are there any important rivers in the United States which flow north?

Ans.: There is only one major river which flows in a northerly direction. It is the St. Johns River which rises in Lake Helen Blazes, flows northward and empties into the Atlantic Ocean a little north of Mayport, Florida, not far from Jacksonville.

NINE COMMON HAWKS

AS A GROUP~HAWKS ARE AMONG OUR MOST BENEFICIAL BIRDS. THEY KILL FAR MORE PESTS THAN GAME OR SONGBIRDS.

THE BIRDS SHOWN ARE ALL ADULTS. YOUNG BIRDS ARE SLIGHTLY DIFFERENT~MAINLY IN THE BREAST MARKINGS.

FEMALES ARE USUALLY LARGER THAN MALES.

RED-TAILED HAWK

RATS, MICE, AND INSECTS MAKE UP 65% OF ITS FOOD. IT EATS SOME GAME BIRDS AND ANIMALS AND POULTRY, AND FROGS AND CRAYFISH.



RED-SHOULDERED HAWK

ITS DIET IS HEAVY WITH INSECTS (32%) RATS AND MICE (28%) FROG AND SNAKES (25%) AND CRAYFISH. BIRDS AND RABBITS ARE MINOR ITEMS.



SPARROW HAWK

IT SHOULD BE CALLED "GRASSHOPPER HAWK" FOR INSECTS FORM 63% OF ITS FOOD.

IT ALSO EATS MICE, FROGS, SNAKES, AND SOME SMALL BIRDS.



BROAD-WINGED HAWK

INSECTS, FROGS, SNAKES, RATS, AND MICE ARE PREFERRED FOOD ITEMS. BIRDS ARE RARELY CAUGHT.



COOPER'S HAWK

ONE OF THE TWO "BIRD HAWKS." SONG BIRDS FORM OVER HALF ITS FOOD~ AND GAME BIRDS AND CHICKENS TOGETHER AMOUNT TO ALMOST A FOURTH. RATS AND MICE ARE ALSO EATEN.



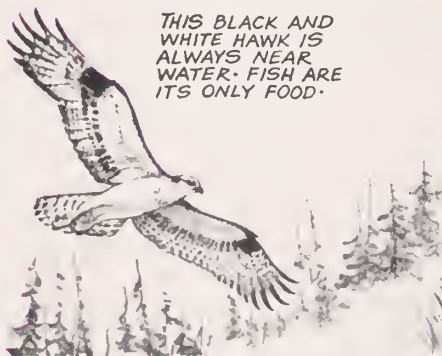
SHARP-SHINNED HAWK

ITS DIET IS ALMOST ENTIRELY BIRDS~96% MICE ARE TAKEN ONLY 2% OF THE TIME.



OSPREY OR FISH HAWK

THIS BLACK AND WHITE HAWK IS ALWAYS NEAR WATER. FISH ARE ITS ONLY FOOD.



MARSH HAWK

SMALL BIRDS (41%) AND RATS AND MICE (33%) ARE ITS PRINCIPLE FOOD ITEMS. IT EATS SOME GAME, FROGS, INSECTS AND CRAYFISH.



Bob Hines



BALD EAGLE

OUR NATIONAL BIRD, FAIRLY COMMON ALONG THE SEACOAST AND BIG LAKES AND RIVERS. ITS MAIN FOOD IS DEAD FISH.